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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,722	06/05/2006	Jan Geralt Bij De Vaate	Stichting20P65401US00	6219
7265 7590 09/17/2007 MICHAELSON & ASSOCIATES P.O. BOX 8489 RED BANK, NJ 07701			EXAMINER DUONG, DIEU HIEN	
			ART UNIT 2821	PAPER NUMBER
			MAIL DATE 09/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/565,722

Applicant(s)

BIJ DE VAATE ET AL.

Examiner

Dieu Hien T. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 06/05/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This Office Action is a response to Applicants' preliminary amendment filed on January 24, 2006. In virtue of this communication, claims 1-23 are currently presented in the instant application.

#### ***Inventorship***

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

#### ***Priority***

3. Acknowledgement is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

#### ***Information Disclosure Statement***

4. The information disclosure statement (IDS) submitted on June 05, 2006 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

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If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.97 to disclose the same.

***Drawings***

5. The drawing submitted on January 24, 2006 is accepted as part of the formal application.

***Claim Objections***

6. Claims 1-23 are objected to because of the following informalities:

Claims 1-23, parentheses and numbers in the parentheses should be deleted.

In claim 1:

Line 7, between "which " and "first" should be inserted - -said- -;

Line 12, before "at" should be inserted - -said- -;

Line 12, between "which" and "second" should be inserted - -said- -;

Line 14, between "which" and "second" should be inserted - -said- -;

In claim 3:

Line 5, "a" should be changed to - -one said- -;

Line 5, "line" should be changed to - -lines- -;

Appropriate correction is required.

7. Claims 20 and 22-23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

Regarding claim 20, in lines 4-5, the recitation "to obtain at least two antenna devices as claimed in claim 1" fails to further limit the subject matter of claims 19 and 1 since the recitation in lines 4-5 of claim 20 is already defined in claim 19.

Regarding claim 22, in lines 5-13, the recitation "a sheet shaped support with a first structure and a second structure, which sheet shaped support is foldable along a fold-line, by means of which folding a first support plane with said first structure and a second support plane with said second structure can be obtained, which first structure and second structure after folding the support form at least a part of the first and second antenna structures" fails to further limit the subject matter of claim 1 since the recitation in lines 5-13 of claim 22 is already defined in claim 1.

Regarding claim 23, lines 4-20, the recitation "folding at least one sheet shaped support provided with at least two antenna structures along at least one fold-line, such that at least one first support plane adjacent to at least one of said fold-lines, which first support plane has at least one first antenna structure arranged for receiving or emitting electro-magnetic radiation; at least one second support plane adjacent to at least one of said fold-lines, which second support plane is positioned at an angle with respect to the first support plane and which second support plane has at least one second antenna structure arranged for receiving or emitting electro-magnetic radiation which differs in at least one property from the electro-magnetic radiation" fails to further limit the subject matter of claim 1 since the recitation in lines 4-20 claim 23 is already defined in claim 1, lines 3-17.

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8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 8 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the feed" in line 3. There is insufficient antecedent basis for this limitation in the claim 8.

Claim 8 recited the limitation "the base plane" line 6. There is insufficient antecedent basis for this limitation in the claim 8.

Regarding claim 20, the recitation "at least one sheet shaped support member" in lines 2-3 is unclear. It is not clear that the "at least one sheet shaped support member" in lines 2-3 of claim 20 is same as or different with the "at least one sheet-shaped support" as recited in claim 1.

Claim 21 is rejected for dependent on claim 20.

Regarding claim 22, the recitations "a sheet shaped support" in line 5 is unclear. It is not clear that the "sheet shaped support" in line 5 of claim 22 is same as or different with the "sheet shaped support" as recited in line 6 of claim 1.

Regarding claim 22, the recitations "a first structure and a second structure" in lines 5-6 is unclear. It is not clear that the "first structure" and the "second structure" in lines 5-6 of claim 22 is same as or different with the "first antenna structure" and the "second antenna structure" as recited claim 1, lines 8-9 and 15-16.

Regarding claim 22, the recitations "a fold-line" in line 7 is unclear. It is not clear that the "fold-line" in line 7 of claim 22 is same as or different with the "fold-line" as recited in line 4 of claim 1.

Clarification is required.

***Claim Rejections - 35 USC § 102***

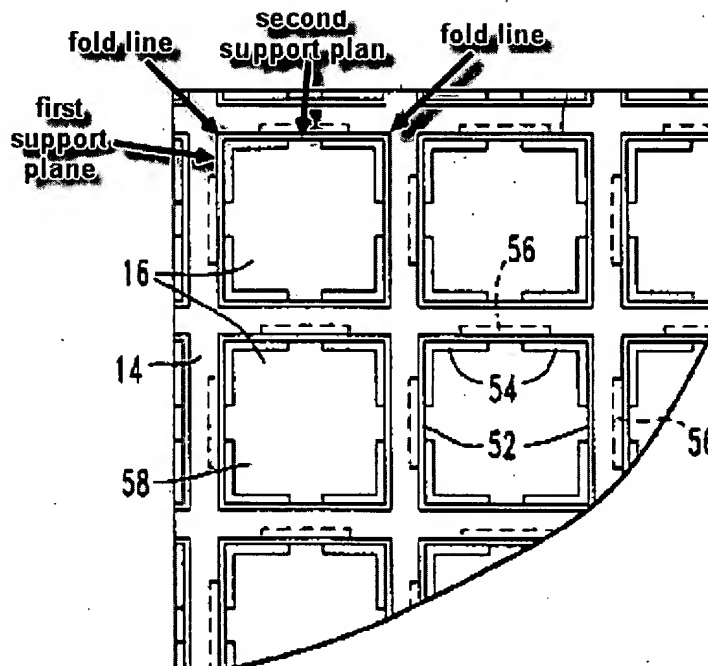
10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-8, 11-17 and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bellus et al. (US 5,786,792, cited by applicants), hereinafter "Bellus".

Regarding claim 1, as best understood, Bellus discloses, in Figures 8, 8A and 8B, an antenna device comprising at least one sheet-shaped support (52) which is folded along at least one fold-line, said support including at least one first support plane adjacent to at least one of said fold-lines, which said first support plane has at least one first antenna structure arranged for receiving or emitting electro-magnetic radiation; and at least one second support plane adjacent to said at least one of said fold-lines, which said second support plane is positioned at an angle with respect to the first support plane and which second support plane has at least one second antenna structure arranged for receiving or emitting electro-magnetic radiation.



Regarding claim 2, as applied to claim 1, Bellus discloses, in Figure 8, wherein at least one of the first antenna structures is arranged for receiving or emitting electro-magnetic radiation of a first polarization; and wherein at least one of the second antenna structures is arranged for receiving or emitting electro-magnetic radiation of a second polarization different from said first polarization.

Regarding claim 3, as applied to claim 1, Bellus discloses, in Figures 1, 8, 8A and 8B, wherein the support (52) is folded along at least two fold-lines, and further comprises a base plane (28 in Figure 2) adjacent to a side of one said fold-lines, at least one of the first and second support plane being adjacent to another side of that fold-line; and said base plane being positioned at an angle with respect to the first and second support plane.

Regarding claim 4, as applied to claim 1, Bellus discloses, in col. 5, lines 4-5, wherein the support (52) comprises an electrically isolating layer.



Regarding claim 5, as applied to claim 4, Bellus discloses, in col. 5, line 9, wherein the electrically isolating layer (52) is made of a flexible material.

Regarding claim 6, as applied to claim 4, Bellus discloses, in Figures 8A and 8B, further comprising a first electrically conducting layer (56) at a first side of the electrically isolating layer (52); and an electrically conducting layer (54) at a second side of the electrically isolating layer shaped into a feed.

Regarding claim 7, as applied to claim 4, Bellus discloses, in Figure 8B, further comprising a second electrically conductive layer (54) at the second side of the electrically isolating layer shaped into connecting lines for transmitting signals from or to the antenna structure.

Regarding claim 8, as applied to claim 7, Bellus discloses, in Figure 8, wherein the feed (54) lies between a first electrically isolating layer (52) and a second electrically isolating layer (14); and wherein the connecting lines (54) are present at a side of the second electrically isolating layer (14) facing away from the first electrically isolating layer (52).

Regarding claim 11, as applied to claim 6, Bellus discloses, in Figures 8, 8A and 8B, wherein the first conductive layer is used as ground.

Regarding claim 12, as applied to claim 1, Bellus discloses, in Figures 8, 8A and 8B, wherein the antenna structures include flat antennas.

Regarding claim 13, as applied to claim 12, Bellus discloses, in Figures 8, 8A and 8B, wherein the antenna structures include vertical antennas.

Regarding claim 14, as applied to claim 13, Bellus discloses, in Figures 8, 8A and 8B, wherein the antenna structures include tapered slot antennas.

Regarding claim 15, as applied to claim 1, Bellus discloses, in Figures 1, 5, and 8, wherein the support is folded along at least one of said fold-lines such that at least one of the first support plane, the second support plane, and the base plane is positioned substantially perpendicular to at least one of the other planes.

Regarding claim 17, as applied to claim 1, Bellus discloses, in Figure 8, wherein the support plane is folded to a sleeve-like shape.

Regarding claim 16, as applied to claim 3, Bellus discloses, in Figure 1, wherein the base plane (28) is substantially rectangular, said first support plane is positioned at a first side of the rectangular base plane and said second support plane is positioned at a second side of the rectangular base plane transverse to the first side.

Regarding claims 19-21, as applied to claim 1 as best understood, Bellus discloses, in Figure 8, comprising at least two antenna devices.

Regarding claim 22, as best understood, as applied to claim 1, Bellus discloses, in Figure 8, an intermediate product for an antenna device and/or an antenna array.

Regarding claim 23, as best understood, the structure in Figures 8, 8A and 8B would enable the steps of a method for manufacturing an antenna device or an antenna array comprising folding at least one sheet shaped support provided with at least two antenna structures along at least one fold-line, such that at least one first support plane adjacent to at least one of said fold-lines, which first support plane has at least one first antenna structure arranged for receiving or emitting electro-magnetic radiation; at least

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one second support plane adjacent to at least one of said fold-lines, which second support plane is positioned at an angle with respect to the first support plane and which second support plane has at least one second antenna structure arranged for receiving or emitting electro-magnetic radiation which differs in at least one property from the electro-magnetic radiation which can be received or emitted by said first antenna structure.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bellus et al. (US 5,786,792, cited by applicants) in view of Cox et al. (US 7,057,563 B2), hereinafter "Cox".

Regarding claim 9, Bellus discloses every feature of claimed invention as expressly recited in claims 1, 3, 4 and 6 except for the first conducting layer extends at least partially over at least a part of the base plane.

Cox discloses, in Figure 1, the first conducting layer extends at least partially over at least a part of the base plane.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Bellus's antenna device with a first conductive layer (30) extending at least partially (40) over at least a part of base plane, as taught by Cox,

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doing so would allow the antenna device to be easily installed into a planar multilayer active array panel antenna assembly (see col. 2, lines 50-54).

16. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellus et al (US 5,786,792, cited by applicants) in view of Matsui et al. (US 6,518,932 B1), hereinafter "Matsui".

Regarding claim 10, Bellus discloses every feature of claimed invention as expressly recited in claim 6, except for further comprising an amplifier element positioned at the second side, which amplifier element is electrically connected with a signal input to the feed.

Matsui discloses, in Figures 1A and 1B, comprising an amplifier element (109 in Figure 1B; 104 in Figure 1A) which said amplifier element (109) is electrically connected with a signal input (108) to the feed (102). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Bellus's antenna device by adding an amplifier element into the antenna device, as taught by Matsui, doing so would amplify the input signal (see col. 7, line 56-58).

Trott does not disclose the amplifier element connected with a reference input to a ground. However, such different is not of patentable merits since it is obvious to set reference input to a voltage level to achieve a desired parameter reference. Therefore, to employ the amplifier element connected with a reference input to a ground would have been obvious design choice to person skill in the art.

Regarding claim 18, Matsui discloses, in Figure 1A, wherein at least one of the antenna structures being connectable to further signal processing devices (108) outside

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the antenna device via a non-contact connection, such as a capacitive or an inductive connection.

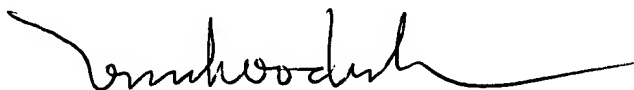
***Inquiry***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DD  
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TRINH DINH  
PRIMARY EXAMINER